

ABSTRACT OF THE DISCLOSURE

An air circuit is disclosed that communicates with a cycling, bi-directional or intermittent pressure source, splitting the output of the pressure source into two channels. One channel continues to cycle bi-directional or intermittent pressure, and a second channel employs a one-way valve allowing output of vacuum only. In one embodiment, this circuit can be used to actuate unidirectional, pulsating human breast milk expression devices that use vacuum to draw milk, while massaging the breast with pulsating pressure. The air circuit preferably includes an additional one-way valve, which is located upstream of the one-way negative pressure valve, for relief of excess positive pressure within the circuit. The negative channel output of the air circuit can contain a pressure regulation apparatus for end-user control of negative pressure to the expression devices.